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**How to Treat Wrinkles.**

See page 247.

# HEALTH

A WEEKLY JOURNAL OF

## DOMESTIC AND SANITARY SCIENCE.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &c.

VOL. XI.—No. 276. FRIDAY, JULY 20, 1888. [PRICE TWOPENCE.

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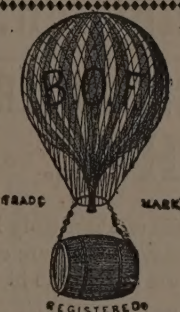


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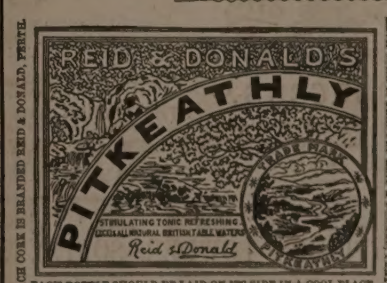
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# ◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, JULY* 20, 1888.


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## Notes by the Way

BY THE EDITOR.

**"Health is the foundation of all our physical happiness."—*Herder.***

A PHYSICIAN reports having treated many cases of sea-sickness with oxalate of cerium, in ten, fifteen, or twenty-grain doses, every two or three hours. He believes that seventy-five per cent. of all cases that occur will be cured by this remedy. Oxalate of cerium is a recognized drug administered in cases of nausea and vomiting, and there is therefore no reason why it should not be efficacious in sea-sickness.

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AMONG the many mooted questions in physiology is the function of the bile, and every new fact bearing upon this important subject is of great value. Dr. Dastre, of Paris, recently remarked that he had previously proven that the presence of bile in the stomach during different periods of digestion did not take from the gastric juice its digestive power: consequently it could not be the cause of vomiting or of severe gastric troubles. At the present time, owing to the success of two operations for liver-fistula, he thought himself in a position to conclude that the bile contributed, as well as the pancreatic juice, to the digestion of the fats—an opinion which is counter to that expressed by Claude Bernard, but held by many physiologists.

THE two animals being in good condition four months after the establishment of the liver-opening, they had been given a meal of fat and milk, and then slaughtered during full digestion. The examination showed with absolute clearness that the lacteals or absorbent vessels were transparent between the stomach and fistula, and, on the contrary, entirely white and milky below the fistula; that is to say, where the bile had been able to get: consequently, if observation on the rabbit shows us that the bile alone is unable to emulsify the fats, the preceding experience shows us that the pancreatic juice alone is also powerless. They must be mingled in order to act well. In other words, bile, as well as the pancreatic juice, takes part in the digestion of fats.

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PROF. JOSEPH LE-CONTE, of the University of California, in writing on human beings employed as "pack-animals," gives the following information in reply to an enquiry in reference to the strength and endurance of the human pack-animal. "In 1844 I travelled by birch-bark canoe something like a thousand miles, from Lapoint over to the head waters of the Mississippi, and down the latter to Fort Snelling, at mouth of Minnesota River. We made several portages, the longest being nine miles. We had along two trunks, and provisions and bedding for four persons for one month. The load which our two *voyageurs* carried was certainly one hundred and fifty to two hundred pounds each.

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"THEY made seven miles in one day, going over the ground five times, *i.e.*, thirty-five miles. Three-fifths of the distance they were loaded, and two-fifths going back for another load. Their plan was to take the heaviest load first (about two hundred pounds), and carry it about a mile or a mile and a half, put it down, go back for another load of one hundred and fifty pounds, carry this a mile or a mile and a half beyond the first deposit, then come back, take up the first deposit and carry it the same distance beyond, &c., until all was carried to the camp for the night; then, last of all, they went back seven miles to the last camp, took up the boat (which was the lightest load of all), and carried it to the camp.

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"I will give an account of one load. They used a leather strap about two inches and a half wide in middle, and slenderer towards the end, and perhaps ten or twelve feet long. One fellow, a famous *voyageur*, would tie this about my trunk (about seventy-five pounds) in two places near each end, and throw it over the head, bringing the band across the forehead, the trunk resting


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on the back, then take a hundred pounds of flour and put on the trunk, and then twenty-five pounds of crackers on top of all, and walk off briskly, almost in a trot. The man was not a large or very muscular man, but rather lean and wiry." These details are of very interesting character, and tend to open up a field of enquiry regarding the unsuspected power of humanity to act the part of the "pack-horse."

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At a recent meeting of the Chemical Society, Mr. R. Warrington showed that the curdling of milk by germs is effected either by the production of lactic acid or, apparently, by the formation of a rennet-like ferment. The amount of lactic acid required to curdle milk depends on the temperature, the amount being smaller the higher the temperature. Five of the germs, says an account of the researches, distinctly acidified milk, but in very different degrees. Staphylococcus candidus produces too little acid to cause curdling, even when the milk, after acidification, is placed in boiling water. The germ or bacillus of infantile diarrhœa and B. termo produce a greater acidity, curdling milk speedily at 32 degs., but failing entirely to curdle it at 22 degs. M. gelatinosus curdles milk speedily at 22 degs., and even at 10 degs. after many days.

✿ ✿ ✿

The two germs, B. fluorescens liquescens and Koch's cholera spirillum curdle milk readily at 22 degs., without producing any appreciable acidity. The latter germ will, indeed, curdle milk made alkaline with sodium carbonate without destroying the alkalinity.

✿ ✿ ✿

We have here, says the account, apparently, a typical case of curdling by means of a ferment. Two of the acidifying organisms which curdle milk, M. gelatinosus and M. ureæ, act, apparently, in part by means of a ferment, as the acidity produced by them when the milk is curdled is quite insufficient in itself to effect curdling at the temperature of the experiment. Soil from an arable field readily curdles milk, even at 10 degs., but without producing, at the time, an appreciable acidity; it acts plainly by a ferment. During the action of soil on milk much gas is evolved, even at 10 degs. That the soil is evidently rich in germs is, therefore, a notable fact. No gas was observed during the action of any of the organisms examined, save in an experiment with the germ of infantile diarrhœa at 37 degs.

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I have often remarked in these pages on the curious and subtle nature of infection and on the care which should be exercised by persons coming from infected quarters to reside amongst healthy persons. A telling example of both of these items is found in the last report to the Health Committee of the Glasgow Town Council. Therein, Dr. Russell states that Glasgow had narrowly escaped from an importation of small-pox. A member of the Preston North End Football Club, which came to Glasgow to play in a match, was unable to play from illness. After sleeping a night in a Glasgow hotel, he went to his parents in Kilmarnock, where his illness developed into small-pox. The medical officer (Dr. McVail) telegraphed to Dr. Russell at once. Fortunately, the room in the hotel had not again been occupied, and the bedding, &c., were at once disinfected. Dr. Russell adds that it would be well if football matches with towns infected with small-pox were avoided, as well as such occasions of popular intermixture as excursions.

# Original Essays

"Life is not to live, but to be well."—*Martial.*

## SHOULD WE DRINK GOAT'S MILK?

By Dr. Andrew Wilson.

That milk is the typical food of the young of animals belonging to the *Mammalian* or "quadruped" class, is of course a fact belonging to the infantile stage of our education. Lower down in the animal scale we may occasionally meet with faint approaches to this secretion, and to the intimate relationship which exists between the mother and the young in the highest class of the animal world. But it is only in that highest class, which includes animal forms varying in perfection from the low "water mole" of Australia up to man himself, that we meet with the perfect representation of the milk-nourished young. Even in the water mole just named—a quadruped which lays eggs like a bird and hatches them out—the young are duly nourished by the milk-secretion.

The kangaroos and their neighbours, which are still of lowly mammalian kind, although decidedly higher than the bird-like water moles of Australia, illustrate the same method of nourishing the young. The young kangaroo, small and feeble at birth, is transferred to the "pouch" of the mother. Therein the nipples of the breast are contained. They are long and fully developed, and the young kangaroo, duly attached to the nipples, remains in this position as a kind of nutritive parasite on its parent. Unable to suck, the young are fed by the mother kangaroo which, by the action of special compressing muscles of the breasts, forces the milk down the throat of the baby-animal. Choking, as in the youthful whales, is prevented in the young kangaroo by a special arrangement of the windpipe. This latter tube is prolonged further up into the mouth, so to speak, than in the adult, so that it embraces the nostrils where they open backwards into the mouth. In this way an air-passage, leading from the outer world into the lungs, is established independently of the throat and swallowing arrangements. Suckling thus goes on contemporaneously with breathing, the one process being independent of the other.

Milk is, in its way, a typical food. It combines the flesh-forming (or *nitrogenous*) food elements with the *non-nitrogenous* or heat-producing and energy-giving foods. In milk we find *casein* to represent the latter, and *water*, *minerals*, *sugar of milk*, and *fat* (or *butter*) to represent the former class of nutritive substances. In milk we find, therefore, every substance needed for the growth of the mammalian body. In this respect it resembles the egg of the bird, out of the substance of which a highly-organized creature is developed.

The *casein* of milk is its "curd," and this substance also constitutes the essential element of cheese. Unlike the white of egg—an analogous substance—casein is not clotted or coagulated by heat, but the addition of an acid (*e.g.*, rennet) at once throws it down as a solid mass. The *pepsin* of the stomach's (*gastric*) juice also coagulates the casein of milk. Again, when milk is exposed to the air, lactic acid is formed through the sugar of milk (or lactin) becoming fermented, and especially in hot weather milk curdles readily. Of the non-nitrogenous matters in milk, *water* is firstly present in what might seem a relatively large quantity; but seeing that water forms two-thirds of the body by weight, and that it is required in,

and for, all vital operations, we may cease to feel surprised that milk should contain naturally (and apart from the modifications of the dairyman) a considerable quantity of this fluid.

The *fat*, or *butter*, of milk is suspended in the fluid in the form of microscopic globules, which are broken up and forced together by the act of churning. The *lactin*, or milk sugar, remains in the milk after both curd and butter have been removed. It is not so soluble in water as ordinary sugar. The *minerals* of milk vary in nature, but include markedly the compounds of lime necessary for forming the bones of the young animal.

An interesting point in connection with milk is that which deals with the composition of that fluid in different animals. Payen, quoted by Pavy, gives the following per-centage table of the varied composition of milk:—

| | Woman. | Cow. | Goat. | Sheep. | Ass. | Mare. |
|---|---|---|---|---|---|---|
| Nitrogenous Matter and Insoluble Minerals ... | 3·35 | 4·55 | 4·56 | 8·00 | 1·70 | 1·62 |
| Butter ..... | 3·34 | 3·70 | 4·10 | 6·50 | 1·40 | 0·20 |
| Sugar of Milk ..... ..... | 3.77 | 5·35 | 5·80 | 4·50 | 6·40 | 8·75 |
| Water ..... | 89·54 | 86·40 | 85·60 | 82·00 | 90·50 | 89·33 |

[*In the case of the sheep and mare it may be remarked that the additions of the figures scarcely realize the per-centage proportion given in the case of the other animals.*]

From the above table the cow's milk is seen to be that which most nearly approaches, in its characters, to that of the human subject, goat's milk ranking next in order, although richer in respect of its various constituents. In the case of the ass and mare, we note small amounts of the nitrogenous casein and fat, and an increased amount of milk-sugar; a fact which renders mare's milk readily utilized in the manufacture of the Tartar's *Koumiss* liquor, now so largely used in the treatment of wasting diseases. Sheep's milk is very rich in nitrogenous matter and fat, and asses' milk, it may be added, is often given with advantage to persons with whom cow's milk disagrees. It is of sweet taste, but is readily digested.

Of late days, special attention appears to have been directed in medical circles to goat's milk as a diet for infants. Dr. Richter, a Continental physician, has of late been directing special attention to this subject, and his views have been criticized in a medical contemporary. He remarks upon the difficulty with which cow's milk is digested by infants, a result due to the fact that it is richer in casein, and therefore forms a chemically-different curd in the child's stomach than that produced by mother's milk. A more serious objection to cow's milk, however, is its liability to be affected with *tuberculosis;* the disease of which "consumption" is a lung-manifestation.

Speaking on this point, our contemporary says that "It is not yet proved to general satisfaction that tuberculosis can be transferred by milk from the cow to human beings, though some authorities unhesitatingly believe that it can; at the same time, they tell us that any contained virus (of tuberculosis, or scarlatina, or other kind) is destroyed by the simple act of boiling the milk. It is a drawback to the use of milk that it should be regarded as a suspicious food requiring even this procedure, and, again, the young are more susceptible to infection than adults (as with the animals themselves), while their nourishment usually consists altogether of milk, or mainly so, for many years. It is easy to say that stringent sanitary regulations ensure the purity of milk, but it is always extremely difficult to ensure their being faithfully carried out; and, besides this, to do it at all effectively would entail vast expense upon the public at large." These are sensible remarks, and we agree with the writer in thinking that suspicious or suspected milk is worse than none at all; while the fact that milk is certainly a vehicle through which many infectious diseases may be propagated (chiefly, it must be admitted, through ignorance and carelessness on the part of dairymen) serves to strengthen the case for a full and careful consideration of the whole question of milk as an article of diet.

Dr. Richter himself maintains that we should induce competition among other animals with the cow. "The only animal," says the account from which we quote, "that can compete with the cow is the goat, and, on the whole, goat's milk is far superior to that of the cow. To begin with, the goat is comparatively inexpensive, easy to keep in good condition, and far more easily kept clean than the cow. The goat will thrive almost anywhere, from mountain heights to the mews of a crowded city. Again, the goat, so far as is at present known, is rarely affected by tuberculosis; veterinary surgeons in neighbourhoods where goats most abound tell us that this animal enjoys a high degree of immunity from that disease. In any case, as before remarked, it is far easier to control the sanitary surroundings of the goat than of the cow. Moreover, the putting to death of any suspicious animal will be effected with less hesitation in the case of the goat than with an animal costing fifteen or twenty times as much. And, lastly, the goat's milk itself, as is well known, is more easily digested by infants than cow's milk."

These observations are worth dwelling upon, because, in the event of tuberculosis especially being proved to be a disease of which we stand in danger from our consumption of cow's milk, it is well to keep in mind the possibilities of the goat as a substitute-animal. The account given by Dr. Richter's views gives analyses of human, cow's, and goat's milk, which may be instructively compared to the analyses of Payen already quoted. Gorup Besanez states the composition as follows: Water contained in 100 parts of human, cow's, and goat's milk respectively is 88·9, 85·7, 86·35; solids generally, 11·1, 14·3, 13·6; casein, 3·9, 4·8, 3·36; albumen, a trace, 0·5, 1·29; fat, 2·66, 4·3, 4·3; milk-sugar, 4·36, 4, 4; salts, 0·13, 0·54, 0,62. Fleischman, again, compares cow's with goat's milk as follows: There exist of water, 83·6 to 90 and 85 parts in cow's and goat's milk respectively; of fat, 2·8 to 4·5 and 4·8; of casein, 3·0 to 5·0 and 3·8; of milk-sugar, 3·0 to 5·5 and 4; of albumen, 0·2 to 0·6 and 1·2; of ashy salts, 0·4 to 0·8 and 0·7. "These analyses agree in the main," says our contemporary, "and thus goat's milk, holding more albumen, is cheaper, bulk for bulk, than that of the cow. Taking everything into consideration, goat's milk could be provided at less cost than cow's milk. The chief advantage of the former lies in its ready assimilation by the digestive organs of the infant, owing to its relatively small proportion of casein, less than that of human, and much less than that of cow's milk."

Whether or not goat's milk may be substituted generally for cow's milk is, of course, a question which the future of sanitary science and domestic economy can alone determine. Where cow's milk can be obtained of pure quality, there can exist no adequate reason for introducing the goat as a substitute for the cow; but it is undeniable that, from the manner in which town-kept cows are usually fed, their milk is of decidedly inferior quality, and cannot be relied upon as a perfect food for infants. In the latter event, there may indeed be for the goat a development of usefulness hitherto unsuspected, seeing

that good, pure goat's milk would prove a most excellent substitute for that of the more familiar animal of our existing dairies.

## VIVISECTION.

By E. GODWIN CLAYTON, F.I.C., F.C.S.

*(Concluded.)*

WE now come to the subject of bacteriological or germ-research, particularly as applied to infectious or zymotic diseases; and in this connection most particularly can it be shown how greatly our dumb friends, as well as ourselves, have gained by these experiments, so often stigmatized as useless.

In this branch of research, experiments upon living creatures are *absolutely indispensable*. Researches stringently conducted upon the lines followed by Koch, Pasteur, Klein, and others have resulted during the past decade in a sheaf of new discoveries, some of which have proved of the highest value and the greatest benefit to the lower animals, as well as to man; and they have also shed light upon past discoveries of great importance to the world at large. The specific germs of anthrax, splenic fever, or malignant pustule (a disease affecting cattle and mankind), of chicken cholera, swine fever, glanders, tuberculosis, erysipelas, and of pébrine and flâcherie (two silkworm diseases) have been actually isolated; and methods of attenuating the virulence of, and of granting immunity from, the diseases in question, have been discovered. Pasteur, a chemist who, by experiments on living animals, has, perhaps, brought greater blessings upon mankind and the animal world than any other single *savant*, discovered that, by attenuating pathogenic microbes, as of swine fever, anthrax, and chicken cholera, through the systems of a series of rabbits, guinea-pigs, or monkeys, complete immunity from these diseases could be conferred.

Pasteur's vaccines, as they are called, having been disseminated throughout the civilized world, have, undoubtedly, saved the lives of hundreds of thousands of valuable animals, and have prevented the expenditure of immense sums of money. This chemist, together with MM. Chamberland and Roux, also demonstrated the presence in earth containing the bodies of cattle dead of anthrax of the *bacillus anthracis*, the specific germ of that disease. This could only be proved with certainty by experiments on living animals. Lastly, it is only necessary briefly to refer to Pasteur's latest researches in connection with rabies. The specific micro-organism of this disease has not yet been discovered, but it appears almost certain that immunity from hydrophobia has been, in many cases, conferred upon patients who have submitted themselves to inoculation with Pasteur's attenuated solutions. This method of treatment, like every other known to mankind, has occasionally failed; but a Committee of British scientific men reported in decidedly favourable terms upon what is, after all, only one of a large number of invaluable discoveries.

In association with the subject of bacteriological research, Jenner's great and beneficent discovery of vaccination must be referred to; a discovery which has been much elucidated by the more recent researches of Pasteur, Koch, Klein, and others.

Lister's antiseptic surgery and Guerin's protective treatment of wounds may also be largely traced to experiments, made upon mice and other animals, by Davaine, Pasteur, and Koch, with solutions containing *putrifying* animal matter, but no specific disease-germs; the result being a form of blood-poisoning called *septicæmia*, which ended in death.

It will be remarked that all these discoveries have resulted from experiments on living animals. Need anything more be said in answer to the argument of anti-vivisectionists that such experiments are useless?

Finally, our opponents say that vivisection is *cruel*. To this we would reply that the pain is grossly exaggerated; that many vivisections consist simply in the infliction of death in a painless manner immediately prior to the examination of a particular organ, as a heart or kidney, which can be fed and kept alive after total separation from the body; and that the capability of feeling pain is, even in the higher domestic animals, far less than in man. The skin of the latter is more sensitive than that of animals; so that skin-wounds give animals little trouble, while in the older operations (without anæsthetics) the incision into the human skin was the most painful part of the process. Horses and dogs feel pain more acutely than rabbits and mice—the sensitiveness to pain increasing with the education and degree of impressibility of the nervous system; and *vice versâ*. The majority of vivisection experiments are performed on the smaller and less highly organized animals, and, whenever possible, an anæsthetic is employed; this, however, gives much discomfort to some animals, such as rabbits.

During the year 1886, 1,035 experiments were made, in England and Scotland, by 64 persons holding licenses under the Cruelty to Animals Act, 1876. Only 40 of these experiments were reported as painful, the amount of pain being generally small. In 213 cases, the animals were killed before recovery from the effects of the anæsthetics employed; and in most of the remaining experiments anæsthetics were not used, the operation consisting in a mere puncture for inoculation. Of course, the pain inflicted in a few cases *may* be very great; but an endeavour has been made to show that these experiments are necessary to the welfare of all the vertebrata, not excepting animals. The necessity is a sad one, perhaps. If, then, vivisection be cruel, so, also, is the amputation of a man's arm, the reduction of a dislocation, or the experimental administration of a nauseous drug by one's medical adviser.

If it were argued that beneficial scientific discoveries have only *indirectly* resulted from experiments on living vertebrate animals (though there appear no grounds for such an argument) the obvious retort would be that no scientific discovery of importance has been made without experiment, followed by inductive reasoning; that but for the experiments of Volta and the earlier electricians, we should not now possess the electric telegraph, the telephone, and the electric light; nor photography but for the labours of Daguerre and Fox Talbot; nor painless operations but for the discovery of a chemical compound called tri-chlor-methane, or chloroform; nor dynamos, but for the experimental work of Faraday and Ampère. Illustrations of this character might be multiplied indefinitely; the few given are instances of an apparently remote connection between the original experiments and the final results. But the relation between vivisection experiments and *their* results is, in nearly all cases, close, direct, and undoubted.

The Cruelty to Animals Act of 1876 has sadly interfered with scientific research in this country—the only nation where such a restriction is put upon investigation. Dr. Ferrier, of King's College, Prof. Fraser, of Edinburgh, and Dr. Lauder Brunton, were stopped in experimental inquiries by the formalities connected with the necessary

licenses; and in the Lamson case, already referred to, even the Crown experts had to wait for several days before they could obtain permission to inject a small quantity of the suspected poison under the skin of a mouse.

The following pregnant remarks, made by Dr. Michael Foster, at the meeting of the International Medical Congress, held in London, in 1881, will fittingly conclude this paper. "In this country physiology (has) fallen upon evil days of a kind unknown in the eighteenth or any other century. A zeal, not according to knowledge, has, whatever commendable impulses may have nurtured it, given rise to legislative action, which has gone far to cripple physiological research in this country. Our science has been made the subject of what the highest legal authority stated in the House of Lords to be a *penal act*. We are liable at any moment in our inquiries to be arrested by legal prohibitions, we are hampered by licenses and certificates. When we enter upon any research we do not know how far we may go before we have to crave permission to proceed, laying bare our immature ideas before those who are, in our humble opinion, unfit to judge them; and we often find our suit refused. We sigh in our bondage, like the Israelites of old; we are asked to make bricks when they have taken away from us our straw. One good fruit of the present Congress may be this: that our foreign brethren, seeing our straits, will go home determined in their respective countries to resist to the utmost all attempts to put the physiological enquirer in chains. For we surely are all agreed that experiment is the chief weapon with which we can fight against the powers of darkness of the mysteries of life. This is written in letters which he who runs may read over all the brief story which I have ventured to tell to-day. What was true in the days of Willis is true now, and I may fitly close with the very same words with which he ends the preface to the 'Cerebri Anatome': 'Nam aut hac via, scilicet per vulnera et mortes, per anatomiam et quasi Cæsareo partu, in lucem prodibit veritas aut semper latebit.' 'For either in this way, namely, through death and wounds, through dissection, and, as it were, by a Cæsarean operation, will truth be brought to light, or otherwise will lie for ever hid.'"

It is to be earnestly hoped that the opponents of vivisection will rest satisfied with the stringent law now in force, and that they will gradually become awake to the real necessity for that which they still desire to abolish. Furthermore, we may hope that an enlightened day may yet dawn when English scientific men shall be again free from a yoke imposed upon investigators of no other nationality.

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The Edge of the Teeth.—Many women have the habit, when sewing, of biting off threads instead of cutting them with scissors. For either natural or artificial teeth this is bad, and soon necessitates repairs. The edge of the teeth becomes very rough by the breaking of the enamel when thread is bitten off many times in the same place on the tooth, as is liable to be the case, for all the muscular force exerted by the jaws is centred upon the small space measured by the width of a thread.

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## "LIKE BEGETS LIKE."

By Dr. E. J. Dungate.

SIXTEENTH PAPER.

Sir T. Watson observes that, like other hereditary maladies, epilepsy may leap over a generation or two, and then appear in a grandchild or great-grandchild. It may also be traced in collateral branches of the ancestry. The fact concerning disease was noticed by Mercatius in "De Morbis Hereditariis—a short treatise published at the beginning of the 17th century. "It skips, in some families, the father and goes to the son, or takes every other, and sometimes every third, in a lineal descent, and doth not always produce the same, but some like and symbolizing disease." This is a very early notice of what is now commonly spoken of as *atavism*, or "reversion."

Messrs. Bouchet and Casauvielh have given some statistics of epilepsy, which show that out of one hundred and ten cases thirty-one were hereditary. Esquirol examined three hundred and twenty-one persons afflicted with epileptic insanity, and one hundred and five of those were descended either from insane or epileptic persons. It is a matter of common knowledge that Julius Cæsar, Mahomet, and Napoleon I. were all sufferers from epilepsy; but we have not been able to find any evidence to prove that in them the disease was hereditary.

In his work, "The Nature and Treatment of Gout and Rheumatic Gout," Dr. Garrod says: "A gentleman laboured under a severe form of gout, with the development of chalk-stones, and, although not more than fifty years old, he had suffered from the disease for a long period. On inquiry, I ascertained that for upwards of four centuries the eldest son of the family had invariably been afflicted with gout when he came into possession of the family estate." This writer further states that, in his hospital practice, quite fifty per cent. of the cases of gout and rheumatism were due to hereditary influence. Cullen speaks of gout as *morbus hereditarius, oriens sine causâ externa evidente*. In the family of the Spanish Bourbons rheumatic gout was hereditary for some generations. Charles IV., of Spain, suffered from it; so did his brothers and ancestors. Both John and William Hunter were martyrs to gout, although they were extremely temperate in their living. Their father suffered from a cognate disease—namely, gravel. In this case it was not the disease but the tendency thereto which was transmitted. When rheumatism attacks young people it is almost certainly hereditary.

Sir Charles Scudamore collected information concerning five hundred and twenty-two gouty persons. "Three hundred and thirty-two could trace their disease to the father, mother, grandfather, grandmother, uncle, or aunt. In the remaining one hundred and ninety the disease was not known to have existed in either upward branch of the family tree."

In the *Medical Times* for 1857, Sir James Paget shows by statistics drawn up from a large number of cases that cancerous disease, or a tendency thereto, is very prone to pass from parent to offspring. He found that one-sixth of his hospital patients who were suffering from cancer had inherited that disease. Amongst his private patients, with whose family history he was better acquainted, he proved cancer to be hereditary in one-third of the cases. Velpeau also gives the proportion of one in three. Lebert, however, states that from one hundred and two complete observations, the cases in which he could obtain an hereditary history were one in seven.

Sir James mentions a case in which a son and his father were both affected by cancer. "None of this man's ancestors nor any other of his children had similar growths, but four cousins, children of his mother's sisters, had as many of them as himself." He also refers to a person who died of cancer in the stomach. Two daughters and many of their children (twelve or fourteen) all died of cancer in different organs. Broca mentions that out of twenty persons, the descendants of Madame L., to the third generation, fifteen died of cancer. The death-rate from cancer in France was about four per cent. in persons over thirty years of age; that is, of course, one in twenty-five. In this case, therefore, the hereditary tendency multiplied the chances of cancer by fifteen. Sibley knew a family in which a mother and five daughters all suffered from cancer of the left breast. Mr. Weeden Cooke ("On Cancer: Its Allies and Counterfeits") examined the histories of seventy-nine persons who had cancer of the breast, and he found that three-eighths of these cases occurred in persons whose relatives had been consumptive.

Cancerous diseases certainly seem to have some relationship with consumption. Sir James Paget mentions this. Dr. S. Moon says: "I heard of a young man who died of cancer in the bowel, who had seven uncles dead from phthisis, and whose sister is at present under my care suffering from disease in the apex of the right lung. Sweep's cancer was always thought to be hereditary; but the recurrence seems explicable by the fact that the occupation was handed from father to son. The supposed hereditary tendency has been suppressed by Act of Parliament.

A very clear family history of cancer is to be found in the *British Medical*, Jan. 11, 1879. A widow was admitted into the North Staffordshire Infirmary who complained of tumours on both sides of the neck and in the left arm-pit. "She stated that her grandfather died at a very advanced age from a 'bleeding cancer,' which affected the right eye and cheek. Her uncle died about the age of sixty from cancer of the tongue, and her mother had a portion of the tongue excised for cancer about thirty years ago, but there has been no recurrence of the disease since. Her sister had one of her breasts removed for 'hard cancer' a few years ago." Sir T. Watson says: "An example of this hereditary disposition has just occurred to me in practice. A patient of mine, a barrister, forty-eight years old, has sunk under scirrhous disease, involving the omentum and extending into all the folds of the peritoneum. This gentleman's mother died of malignant disease of the leg, where it commenced as a small wart. His brother died of cancer of the lungs, which penetrated the sternum and sprouted out upon the chest. And this brother's wife, who was his cousin also, fell a victim to the same form of cancer." The first Napoleon died of cancer of the stomach; so did his father and his sister.

Mr. Hutchinson remarks that cancer is generally dependent upon age. Amongst lower animals, cancers are almost always the accompaniment of old age. He says: "Old dogs and old cats get cancer of the lip or *manima*, but these maladies are scarcely ever seen in young animals." When, however, cancerous growths do occur in the young there is a very strong probability of a history of inheritance.

Warts and moles are sometimes hereditary. Mr. Sedgwick says in the *Medico-Chirurgical Review* for 1863: "In the family of one of my patients, at present under observation, warts on the hands have been hereditarily limited to the female line for two generations; the mother herself was much troubled with numerous warts on both hands, which appeared in infancy, continued during childhood, and disappeared soon after puberty; she has had five children. . . . . The two sons have never had a wart, whilst all of the three daughters are troubled with them." This is in an article dealing with the influence of sex in hereditary disease. In the *Edinburgh Medical Journal* for Oct., 1820, there is an account of a patient who ultimately died from the effects of an abdominal tumour which had arisen in the locality of a mole. The writer of the report says: "This tumour, I have remarked, originated in a mole, and it will be worth mentioning that not only my patient and his children, but also his own father and brothers had many of them. The youngest son has one of these exactly in the same place where the disease in his father first manifested itself. These facts . . . . would induce me to believe that the disease is hereditary." Other evidence can also be produced to show that moles occasionally occur in exactly the same position in different members of the same family.

Acne has also a tendency to run in families, and the same form often prevails in members of the same family. *Acne tuberosa* is said to descend from father to son; but women are known to have it in families where their male relatives are afflicted by that form. Closely connected with this tendency to acne is a liability to styes and boils.

Montaigne tells us, in his essays, that he suffered from stone in the bladder, and so did his father before him. "'Tis to be believed," he says, "that I derived this infirmity from my father, for he died wonderfully tormented." He was "never sensible of his disease till the sixty-seventh year of his age, and before that had never felt any grudging or symptom of it, . . . . but lived till then in a happy, vigorous state of health, little subject to infirmities, and continued seven years after in his disease, and died a very painful death. I was born about twenty-five years before his disease seized him, and in the time of his most flourishing and healthful state of body, his third child in order of birth. Where could his propensity to this malady lie lurking all that while? And he, being so far from the infirmity, how could that small part of his substance carry away so great an impression of its share? And how so concealed that, till five-and-forty years after, I did not begin to be sensible of it? being the only one to this hour, amongst so many brothers and sisters, and all of one mother, that was troubled with it. He that can satisfy me on this point, I will believe him in as many other miracles as he pleases, always provided that, as their manner is, he does not give me a doctrine much more intricate and fantastic than the thing itself for current pay."

In the *Lancet* for 1863, Mr. Squire mentions a man who had been operated upon for stone, and was a constant sufferer from the passage of calculi. A son of his was still-born, and the kidneys were found to contain numbers of small calculi, some of which were of the size of a pea. The *Lancet* for Feb., 1872, gives another very interesting case. There was a fisherman, in Lowestoft, whose children were afflicted with stone. A surgeon had operated upon three of his sons, for stone, at the ages of two, three, and eight respectively. The father and mother had been troubled with gravel. The grandfather had passed one stone, and the grandmother seven. A great-uncle had been operated upon for stone, and there were six uncles and four aunts, all, more or less, troubled with gravel. Such a strong case of heredity is very rarely found.

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## WRINKLES.

Turning to the standard works on pathology, not a single word appears on wrinkles. All must agree that this is not strange. Yet, aside from a vein of merry humour, which attaches to a hunt for wrinkles in a profound treatise on pathology, there is, after all, perhaps, something besides vanity and vexation of spirit in a passing consideration of "crow's feet" upon the skin. As we like to put off old age till the remotest to-morrow possible, so must the appearance of wrinkles suggest the poet's longing, so sweetly sung:—

"Give me the lively springs of gladness,
Of pleasure stretched almost to pain;
My love, my hate, in all their madness—
Give me my youth again."

"Old age is still old age," and we should with Shakespeare say:—

"With mirth and laughter let old wrinkles come."

In such case their appearance will not be untimely. Proper living is the best guard against old age and wrinkles, and probably sleep—"sleep, that knits up the ravelled sleeve of care"—will do more than any other one thing to keep with each possessor the rosy rotundity of beauty and health.

But when, in the noonday of life, the corrugations begin to fold the skin long, long before the normal time—what is to be done? Then, eliminating unsanitary general causes, local care is requisite; and ever since mankind has found a little leisure from the hunt and drudgery necessary to get food, some attention has been paid to cosmetics of all sorts—good, bad, and indifferent.

With the exception of the inhabitants of Sparta and Thebes, who despised perfumes, the Greeks held ointments in great reverence. We read that it was from the summit of the sacred mountain of Thessaly that the nymph Œnone, the perfumer of Olympus, brought the secrets of cosmetics. Circe also devoted herself to searching for efficacious plants to preserve her remarkable charms. The tragic poet, Sophocles, represents Venus before her mirror perfuming her hair; and Minerva anointing her chaste body. Under Solon, 150 years earlier, so great had been the abuse of cosmetics that they were made the subject of legislation; but the prohibitions of Solon were unavailing, and so, too, were the railleries of Socrates, who said that the slave and the philosopher, when perfumed, had the same smell.

Aristotle describes how the Greeks anointed their heads before their banquets; and the humorous poet, Alexis, informs us that doves, each impregnated with different essences, hovered over the guests, raining down upon them perfumes from their moistened wings. Every part of the body had its particular application—mint for the arms, *palm oil for the cheeks and breast*, a pomade of marjoram for the eyebrows and hair, ground ivy for the neck. In Rome, as in Athens, cosmetics were used by men, as well as women. "Go where one will," says the epigrammatic poet, Martial, "one smells the shop of Cosmo" (the fashionable perfumer).

When the skin is wrinkling, it will invariably be found to be losing its elasticity and perfectly healthy hue. Usually, it will appear a trifle dry. For this reason, unctuous materials have, with propriety, been used to postpone the advent of the wrinkles.

Current rumour yields an interesting bit of gossip. It is said that Mrs. Langtry was painfully apprised that the wrinkles were coming, yea, were already fixed upon the Jersey Lily's brow and about the external angles of her eyes. Hearing that Persian women—those women have always been *au fait* in matters of the kind—prevented the oncome of wrinkles by direct daily applications of veal to their visage, Mrs. Langtry proceeded to adopt the Persian *régime*. It may, doubtless, be reasonably inferred that when her head was in poultice for two hours of tormenting inactivity, she was "out" to callers.

It is as curious as it is interesting to note that what the ancient Roman ladies used to prevent wrinkles was called Esypus (a form of wool fat), and was none other than the great discovery of our time known as Lanoline, which science and art have purified into the most innocuous nutritive and preservative for the skin. Modern ladies have been using a Lanoline Cold Cream, or Toilet Lanolin, for the same purpose, and, judging from the reports appearing in the press from time to time, with most satisfactory results. As Lanoline is the natural nutrient oil of the skin, it is probably safe to say that if it will not prevent wrinkles or remove them—nothing will.

## THE KISS OF DEATH.

Thoughtlessness and the gratification of sentiment are responsible to a deplorable extent for the extension of infectious disease during epidemics. Some instructive experiences on this point are recorded by Dr. Bruce Low in his recent official report on the prevalence of diphtheria in Enfield. Not a few instances came to light in which parents, accompanied often by children, had visited at houses where diphtheria existed for the purposes of condolence, of gossip, or of idle curiosity. And very commonly children, regarded by their parents as practically well after diphtheria, were sent to school without trouble on the part of anyone to obtain certification as to their freedom from infection. So, too, as regards what appear to have been mild cases of diphtheria, people have been content to take advice from "chemists," who, in turn, have given medicine for "colds," "teething," and the like, with the result that in several instances children having decided diphtheria have mingled freely with their fellows.

Again, there is a custom among the working class in Enfield, as, indeed, elsewhere, of assembling children of the family in the sick-room to take their last leave of a relative dead or dying from infectious disease; and children have even been brought from other districts to take part in such formal leave-taking. In one case, a child having been attacked by diphtheria, the rest of the children were sent off to the house of a relative to be out of danger's way. But the case being likely to prove fatal, the children were roused from their sleep at midnight to return to the infected house to bid the little sufferer a

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last farewell. One little child was brought in a blanket to save time. As the patient was dead on their arrival, they were each lifted up to kiss the lips of their dead brother. Whether from kissing the corpse or from returning to the infected atmosphere of the sick-room, the other children contracted the disease, as might have been expected.

In another instance, a mother kept her little girl, an only child, from school to prevent her catching diphtheria; but she permitted her to go to the house of two companions, who were known to have had throat-illness, to play with them during their convalescence. She took diphtheria and died. In several cases, mothers persisted, in spite of the warnings and entreaties of their medical advisers, in kissing their children's lips, and in this way appeared to have contracted diphtheria.

Dr. E. F. Fussell, the health officer of East Sussex, refers to the same subject in a recent report. "About ten years ago," he says, "an adult person died of diphtheria at Catsfield. The corpse was taken a few miles distant to a cottage at Seddlescomb. The coffin was opened (as reported to me) outside of the cottage, and the body exposed to the view of the relatives. In a few days there was a severe outbreak of the same disorder amongst the inmates of the dwelling at Seddlescomb. There had been previously no case of diphtheria in that village. About six years ago a child died from 'diphtheritic croup,' as reported, at Warbleton. Some of the children from the National School visited the corpse.

"Several cases of diphtheria, some fatal, occurred amongst these children soon after visiting the body of their late schoolmate. The latter incident, from various circumstances, was not to me so convincing as the former, in relation to the risk of infection which may occur to some of those who unnecessarily expose themselves to such possible dangers."—*Sanitary Record.*

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STABLE MANURE.—It may be interesting to the Metropolitan Sanitary Authorities to note the new industry which has been established at Purfleet, for the purpose of making cardboard from stable manure. The St. Louis Park Mills stand on marshy land, and are built on an artificial bed of concrete, no less than 8,000 tons having been used, the bed being held together by 500 tons of steel rails. The processes by which the straw is cleansed from filth are interesting and ingenious, and the premises generally well worthy of a visit. In most parishes in London there is at certain times of the year a difficulty in getting rid of stable manure, but the new industry is likely to raise its value, and therefore indirectly facilitate its speedy removal.

WOUNDS OF THE ABDOMEN.—Modern surgery, aided by antisepsis, has enabled surgeons to accomplish results which, twenty-five years ago, would have been deemed impossible. This is in no department more marked than in abdominal surgery. While formerly a wound of the abdomen, either from a gunshot or a stab, was considered almost necessarily fatal, at the present day many lives are saved by an operation which consists in opening the abdomen, tying every blood-vessel that may have been lacerated, and sewing up any wound which may have been made in the intestines. One of the most difficult parts of the operation consists in finding the intestinal wound. Dr. Senn, of Milwaukee, proposes to inject, per rectum, hydrogen gas, which, he has demonstrated in dogs, finds its way through the entire length of the intestine; and, if an opening exist, the gas will escape, and can be detected.

# The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

## A PHYSICIAN ON OVER-POPULATION.

DR. J. HALLIDAY CROOM, in the course of a valedictory address to the Edinburgh Obstetrical Society, made the following remarks on over-population from a physician's standpoint. His remarks are interesting, as presenting one phase or side of a question which is daily growing in public importance:—Among the moot points which present themselves to the practical obstetrician at the present time, there is one which I honestly believe will require to be faced by this and similar societies sooner or later. It is a subject upon which I desire to speak with reserve and circumspection. I refer to the growing prevalence in our country of artificial interference with the propagation of the species. That this is the case to an enormous extent in all classes of society is a fact beyond any kind of dispute. It is a question which strikes at the root of our social system, which, to a very considerable extent, affects the morals of our people, and which is the undoubted cause of many functional and organic troubles amongst women. The question is one which has been by no means settled by our profession. Such practices have at least the tacit sanction of many; others put the matter aside as Malthusian doctrine, apparently not at all sure whether Mr. Malthus were a charlatan whose doctrines were scandalous and not fit for discussion, or a scientific man whose theories were too recondite for the average intellect. As his biographer says: "Malthus was the best abused man of his age. He was denounced as a man who defended smallpox, slavery, child-murder. He was assailed as a man who was hostile to soup-kitchens, early marriage, and parish allowance; who had the imprudence to marry after preaching against the imprudence of a family; who thought the world so badly governed that the best actions do the most harm; who, in short, took all romance out of life, and preached a dull sermon on the thread-bare text, 'Vanity of vanities, all is vanity.'" The work of Malthus was second in importance only to that of Adam Smith, and his work on over-population stands in the same relation to over-population as that of Smith's "Wealth of Nations" does to free trade.

Not that Malthus's work can be classed with that of Adam Smith's. The latter was the founder of a science, the science of political economy, in as real a sense as Newton was the founder of physical astronomy. To any one reading it must be evident that Malthus was not the man to found a science; competent judges, indeed, tell us that his Political Economy is far from a masterful work, and is remembered only from the fact it is by the author of the great essay on Population. Malthus's work, though less original, was hardly less valuable, and consisted in the re-discovery of the forgotten truths insisted on in that essay. Malthus dealt with morals and philanthropy on their practical side. He had to do with political economy only because it is the science of a large part of man's happiness. The truth upon which he constantly insisted was that the way to happiness lies through self-control; and whatever claims he has to be called a moralist and economist arise from his application of this truth, not merely to the individual, but to the nation. Society, he insisted, "is master of its own fate." The neglected truth which Malthus brought to light may thus be stated:—

Population tends to grow indefinitely, and is in general restrained in its growth only through difficulty in obtaining food for its increasing numbers; for the production of food on a limited area cannot be indefinitely increased. Under favourable circumstances, population doubles itself in twenty-five years. In most countries food cannot be increased to meet the possible increase of the population, and the population must be kept down to the level of the food. There are only two ways in which this can be done, either the number of deaths must be increased, or the number of births diminished, as compared to what would be if the population had room to increase without limit.

The former is what Malthus calls the positive check, the latter the preventive check; when population is approximately stationary, one or both of these checks must be in action. Suppose the case of a country where population does not increase being kept down to the level of subsistence, and yet the number of births as great as in a population doubling in twenty-five years, it follows that the deaths will be due to want of food; they will be those chiefly of children dying from diseases caused by want of sufficient nourishment. In this the positive or destructive check acts alone. Suppose, on the other hand, the circumstance as to the supply of food the same, but the ways of the people such that the preventive check acts alone; the meaning of this is that the population will be kept within the limits of subsistence by diminishing the number of births, that men will not incur the responsibility of bringing children into the world without a fair prospect of being able to bring them up in health and comfort. Malthus's position was quite apart from the devices and arts such as I have already hinted at. What he in effect says is: "Every desire has its proper place and proper gratification if we can find them. The passions are the materials out of which happiness is made; they are therefore to be regulated and harmonized — they are not to be extinguished or even reduced in intensity. After the desire for food the desire for marriage is the most powerful and general of our desires. To say, therefore, that the desire for marriage is to be restrained and regulated is not to treat it exceptionally or deny its naturalness." The following quotation will show that Malthus, though wiser, was not colder than his fellows, although he did not marry till late, just before becoming a professor in India.

"When we contemplate the constant and severe toil of the greatest part of mankind, it is impossible not to be forcibly impressed with the reflection that the sources of human happiness would be most cruelly diminished if the prospects of a good meal or a warm house and a comfortable fireside in the evening were not incitements sufficiently vivid to give interest and cheerfulness to the labours and privations of the day. Perhaps there is scarcely a man who has once experienced the genuine delight of virtuous love, however great his intellectual pleasures may have been, who does not look back to that period as the sunny spot in his whole life, where his imaginations love to bask, which he recollects and contemplates with fondest regret, and which he would most wish to live over again."

The question of over-population and the misery and wretchedness which follow in its train is a gigantic one. Malthus contended for an earthly paradise, a large actual population, and a state of society in which abject poverty and dependence are comparatively but little known—a society, in fact, where moral restraint is perfect.

Many have assumed that there must be self-acting checks to population, the nature of which is not yet understood; but there is no sufficient ground for this belief. The only really self-acting check is want of food. The great destroyers of population history tells of are war, pestilence, famine. All these, however, are ceasing to act. Wars are not wars of extermination, and women and children are spared. Improved sanitary conditions and increased medical skill have, in great degree, checked pestilence. The increase of commercial facilities have made famine in civilized countries impossible. This, however, only hastens the time when the difficulty will be felt from increasing population. How to deal with such a matter does not fall to be discussed here.

Let us not, as a profession and as members of this Society at least, give any sanction to methods adopted by the laity, and connived at by many in the profession, of interfering with a normal function by means other than by self-regulation and control — means which insidiously destroy virtue and sexual morality, and which, in the experience of any one who has paid any attention to the matter, are the cause of endless physical and mental ill-health to our married women. That under certain exceptional circumstances even these means are necessary and legitimate, most practical men must admit, and it is our duty as a profession to lay down a definite and clear rule for interference with conception as now exists for the induction of abortion or premature labour. The question is, at all events, ripe for discussion.

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Female Doctors in New York.—There are, it is said, no fewer that 150 female physicians practising in New York, while more than double that number are to be found in Brooklyn and the adjacent cities. Their professional earnings are in general equal to those of the average male practitioner, while not a few of them make an income which even a fashionable London physician would not be ashamed to acknowledge. Quite a number of the New York lady doctors are known to make the sum of £2,000 a year regularly. Some two or three are believed to realize, one year with another, an income of between £3,000 and £4,000, while one princess of the profession of the science is stated to have cleared a steady annual income of £5,000 for some years.

A Faith Cure.—"One day a labouring man came to me with indigestion. He had a sour and sore stomach, and heartburn, and the waterbrash, and wind, and colic, and wonderful misery of body and mind. I found he was eating bad food, and too much of it; and then, when its digestion gave him pain, he took a glass of raw whisky. I made him promise to give up his bad food and his worse whisky, and live on pease-brose and sweet milk; and I wrote him a prescription, as we call it, for some medicine, and said, 'Take *that*, and come back in a fortnight, and you will be well.' He did come back, hearty and hale—no colic, no sinking at the heart, a clean tongue, and a cool hand, and a firm step, and a clear eye, and a happy face. I was very proud of the wonders my prescription had done, and, having forgotten what it was, I said, 'Let me see what I gave you.' 'Oh,' says he, 'I took it.' 'Yes,' said I, 'but the prescription.' 'I *took it*, as you bade me. I swallowed it.' He had actually eaten the bit of paper, and been all that the better of it; but it would have done him little, at least, less good, had he not trusted me when I said he would be better, and attended to my rules."—*Dr. John Brown.*

# Public Health

"Health is the first Wealth."—*Emerson.*

## MEAT-POISONING.

By JOHN A. CHESNEY, M.D.

*(Concluded.)*

THE first point to which I wish to draw your attention is the short time this meat was placed under conditions favourable to the formation of poisonous alkaloids, by fermentation or putrefaction. It was exposed Saturday evening, while cooling to a temperature of about 50 deg. for four hours. It was then placed in the ice-box, the temperature of which, when well filled is about 40 deg., where it remained until Monday morning, when it was again exposed from 9 or 10 a.m. to 12 noon, or about two and one half hours, to a temperature of nearly 60 deg., the maximum temperature for that twenty-four hours being 66 deg. and the minimum temperature 44 deg. This is a much shorter time than that given by any of the experimenters upon the subject of the formation of the poisonous alkaloids, and the circumstances were decidedly unfavourable to their development.

I wish also to direct your attention to the promptness with which the symptoms made their appearance in each case—the first in five hours, the second in five and one quarter hours, and the third in five and one half hours. It would thus appear that the ptomaine, which resembles atropine in its toxic effects, has a period of incubation of five to five and one half hours; that it is among the first poisonous alkaloids produced; that it is developed under certain circumstances in meat that would be considered far from putrid or decomposed; and is, perhaps, rather a product of fermentation than putrefaction.

J. U. Barnhill, A.M., M.D. (Lecturer on Toxicology, Columbus Medical College, Columbus), added, with regard to this subject, that at the last annual meeting of this Association he presented a paper on "Ptomaines and Meat Poisoning," in which he reviewed at some length the history and chemistry of these interesting products of decomposition, and reported over a hundred and fifty cases of meat poisoning, besides many cases of poisoning from cheese and ice-cream. It may now be safely assumed (he said) that the symptoms of poisoning from canned beef, dried beef, and sausages, cheese, and other putrid albuminous substances, is due to cadaveric alkaloids. Experimenters are still busy at work in this new field of inquiry, and new ptomaines are being added to the list. It would be consuming too much time to even give the names and sources and toxicology of the ptomaines that have been discovered recently. The literature on the subject is mostly concerned in their chemistry, physiological and toxic action, and in their relation to bacteria and the phenomena of disease.

In these relations they are of more interest to the analytical chemist and pathologist than to the sanitarian.

In a criminal case against an Italian servant for poisoning his master, an expert reported that delphinine was the source of poisoning, and Francesco Selmi saved the defendant from unjust conviction by proving that a putrefactive alkaloid was the cause of death. Other cases of similar character are on record.

Meat poisoning, or botulismus, has always been most frequent in those countries in which large quantities of prepared meats are used. In the Swabian districts of Germany, where smoked sausages are staple articles of food, this form of poisoning has been comparatively frequent.

In our own country poisoning is comparatively rare. Only two or three cases in Ohio have been reported to the secretary of the State Board of Health within the year, and these were of so little importance that the parties did not furnish particulars nor aid in investigations. The cases of cheese poisoning at Akron, which occurred recently, are now under investigation by the State Board of Health. They were, doubtless, produced by tyrotoxicon, the putrefactive alkaloid discovered by Professor Vaughan. At Thorn Grove, Ky., in last July and August, a "fatal epidemic prevailed" among the families who used water from a certain spring. Several deaths resulted, and upon investigation it was found that the source of the spring had been "polluted and poisoned" by the decomposition of a number of dogs that had been killed and thrown into a cave through which the main stream of the spring flowed. "Some time after the community had ceased using the water from the spring, a traveller drank of the water, and in a few minutes was made deathly sick." This is a good illustration of the large quantity and virulence of the cadaveric alkaloids that may be elaborated in decomposition, as well as of the vigilance that should be used in maintaining the purity of drinking waters.

The practical question for us to consider as sanitarians is, how can *poisoning* from decomposed foods be prevented? We are to look for its prevention in the education of public opinion on questions of public health, and the establishment and encouragement of boards of health.

It was through its efforts, and the untiring efforts of some of its most active members, that that Board was established. It is through these agencies — educated public opinion and efficient boards of health—that we are to look for a diminution of the amount of unwholesome foods, and, consequently, in the diminution of the number of cases of meat poisoning. These questions must be pressed upon the attention of the public, until individuals shall be more careful in their purchases and better able to detect unwholesome foods; more exacting of dealers in requiring them to supply only wholesome articles, until unscrupulous dealers shall know that it is unsafe to offer for sale spoiled meats, and until public opinion shall be so exacting that boards of health shall be compelled to do the whole duty, and courts shall mete out the severest penalties to offenders.

What has been done in this line by boards of health throughout the State in protecting innocent purchasers, may be inferred from what has been done in given localities. In the eight months ending January 1st, 1888, the Board of Health of Columbus condemned 15,639 pounds of spoiled meat, besides large quantities of fruits and cheese. It authorized the arrest of nine dealers for handling decomposed meats, all of whom were convicted and fined. When we realize how virulent are the ptomaines developed in decomposing animal matter, and that spoiled meats are not always easily detected by the unwary or ignorant, we readily understand the valuable service that has been done for the community in withholding these eight tons of poisonous food from the mouths of consumers. The ptomaines generated in one egg (reported a year ago) killed one person and made two others very sick. The ptomaines dissolved out of the putrescent mass of dead dogs at Thorn Grove was sufficient to render the water in a spring a considerable distance away fatally poisonous for several weeks. One milligramme of an oily ptomaine,

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**IS SNUFF-TAKING UNHEALTHY?** In No. 218.

**SOME HINTS FOR THE CURE OF FATNESS.** In Nos. 213, 225.

**PALPITATION AND ITS TREATMENT.** In No. 216.

**SCARLET FEVER.** In Nos. 220, 230, 232.

**DRESS AND UNDRESS.** In Nos. 216, 217.

**NURSING.** In Nos. 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219.

**HATS AS A CAUSE OF BALDNESS.** In No. 215.

**HOUSE CONSTRUCTION IN RELATION TO HEALTH.** In Nos. 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234.

**HEALTHY HOLIDAYS.** In Nos. 223, 224, 225, 226, 227, 229, 230.

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**HYDROPHOBIA: ITS NATURE, CAUSES, AND TREATMENT.** In Nos. 20, 21, 23, 24, 25, 26.

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# The Forms of Nasal Obstruction

IN RELATION TO

## *THROAT AND EAR DISEASE.*

BY

## GREVILLE MACDONALD, M.D., Lond.

*(Physician to the Throat Hospital.)*

LONDON: A. P. WATT, 2, PATERNOSTER-SQUARE.

extracted by Gautier, killed a bird very suddenly. When the public come to understand that such virulent poisons are generated in putrid foods, even in dangerous quantities, in the very beginning of decomposition, they will be more wary in their purchases, more exacting of their dealers, and more helpful to local boards of health.

## DISPOSAL OF THE DEAD.

By Robert R. Tatlock,
*City Analyst, Glasgow.*

The earnestness with which the correspondence on this subject has been carried on, and the action taken by the Philosophical Society of Glasgow at the instance of Dr. Ebenezer Duncan, indicate very clearly that the public are beginning to awaken to the propriety, or rather necessity, of disposing of the dead in some manner more conducive to health and life, or rather less conducive to disease and death, than the system hitherto followed in this country of simple burial in the earth.

The time has gone past, I hope, when persons who have any pretentions to a liberal education require to be told that the diseases which are produced from the "emanations," "miasmata," or "effluvia" (so called) arising from dead matter are not caused by poisonous gases. There are no gases known to chemists that come from dead matter which could create such effects, and I think all who have paid sufficient attention to the subject are agreed that, as the result of observation, it has been definitely ascertained that the majority, if not all, of the cruel diseases to which poor humanity is constantly exposed, such as typhoid and typhus fever, diphtheria, small-pox, cholera, croup, whooping-cough, scarlatina, intermittent or malarious fever, yellow fever, pneumonia, &c., are produced by specific microbes or living organisms, or their spores, which rapidly develop, multiply, and generate poisons in the animal system, to the effects of which the victim ultimately succumbs.

Hence the duty of disposing of dead matter in such a way as to prevent the possibility of its becoming a *nidus* for the storage of disease-breeding germs, which may be disturbed at some far future time by persons whose ignorance, carelessness, or cupidity may lead them thus to imperil their health or their life. Earth-burial, as it has been and still is carried out in this country, although it disposes of the body, does not dispose of the danger, as it is well known that although air is an attenuator—and, perhaps, even destroyer—of disease-germs, earth with insufficient air leaves them unimpared and ready to act, with all their virulence, after the lapse of many years, even generations. Hence there is danger even in deep burial. The only alternative to earth-burial which any of your correspondents seem to have proposed is that of cremation, and certainly this disposes of the sanitary aspect of the question; but as Dr. Duncan remarks there is still the æsthetic side to consider, which is of great importance, and with which I think the great majority of us deeply sympathize.

Our experience of the effects of fire on the living body makes it difficult for most of us, who are not specially educated up to it, to reconcile ourselves, at a moment when our feelings are at the tenderest, to the committal of a form dear to us to the furnace or incandescent oven; and, therefore, I think compulsory cremation, even if it were sufficiently economical, would be a hardship as regards the living. These considerations have induced me to reflect whether there is not a plan possible which would admit of earth-burial in limited space as at present, providing security from the evolution of disease-germs, and at small cost—a consideration of importance for a large town. I think the following would meet these requirements:—Place in the coffin a mixture of equal parts of caustic soda and slaked lime, ground together and sifted, in quantity from five to fifty pounds according to size. This mixture would cost about ½d. per pound and the average cost for material would be about 1s. per interment, or only about £700 for the 14,000 deaths that occur in Glasgow in the course of a year. The caustic properties of this mixture are such that the softer or fleshy parts of the body, which decay slowly in earth, are rapidly decomposed, and any disease-germs evolved would be cauterized and destroyed as effectively as if they had passed through a fire. The mixture is in the form of a snow-white powder, and it is difficult to imagine that anyone would object to its use.

It would not be convenient to introduce the mixture before the body was removed from the house, so that in the case of private interments it would require to be done at a mortuary or gate-house of the cemetery, in presence of the friends of deceased, which would occupy only one or two minutes. The gaseous and vaporous products of decomposition under earth-burial are ammonia, carbonic acid, light carburetted hydrogen, sulphide of ammonium, and sulphuretted hydrogen. By the use of the soda-lime mixture, the only gas evolved would be the ammonia, which is of the same nature, and would be as harmless as the odour from a smelling-bottle.

At the same time, I do not see any reason why properly constructed and suitably located crematoria should not be erected, and the process of cremation sanctioned by law—at present, however, only for such as have during their time declared their desire to have their remains so disposed of, and when their request is endorsed by their nearest relatives after death.—*Sanitary Journal.*

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The ancient Egyptians are said to have written with an ink consisting of a solution of borax in shellac, in which lamp-black was suspended. Such an ink perfectly resists all re-agents.

Drainage in Old Rome.—In digging trenches for the purpose of laying the foundations of new forts in Rome, the workmen came upon the remains of ancient drainage works. The most perfect example was found below the surface of a hill on which a Roman villa once stood. A system of tunnels four feet high and two feet wide were cut through the porous rock, the roof supported by pairs of large tiles meeting in the centre. The galleries of this tier converge to a common outfall which leads to a second tier a few feet lower. The outfall of this tier is narrow and closed by a sheet of lead eighteen inches square, pierced with numerous holes and serving as a strainer, through which the water passes to the third tier forty feet from the surface. The floor of this tier is level, has no outfall for the water, and is six feet high and nearly three feet wide. This serves as a place of storage for the water conducted to it by the upper drains, and is connected with the surface, as were the others also, by a perpendicular shaft up which the water could be raised. Steps were placed in the shaft for convenience of access when they were cleaned. When the drains had been cleared, though it was a dry summer season, the water again began to flow, and the drains to discharge their double duty of sanitating the soil and providing water for the villa above as when first built centuries ago.

# Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

**Finger-Marks and Identity.**—Perhaps the most beautiful and characteristic of all superficial marks are the small furrows, with the intervening ridges and their pores, that are disposed in a singularly complex yet even order on the under-surfaces of the hands and the feet. I do not now speak of the large wrinkles in which chiromantists delight, and which may be compared to the creases in an old coat or to the deep folds in the hide of a rhinoceros, but of the fine lines of which the puttered fingers of children are apt to stamp impressions on the margins of the books they handle, that leave little to be desired on the score of distinctness. These lines are found to take their origin from various centres, one of which lies in the under-surface of each finger-tip. They proceed from their several centres in spirals and whorls, and distribute themselves in beautiful patterns over the whole palmar surface. A corresponding system covers the soles of the feet. The same lines appear with little modification in the hands and feet of monkeys. They appear to have been carefully studied for the first time by Purkinje in 1822; since then they have attracted the notice of many writers and physiologists, the fullest and latest of whom is Kollman, who has published a pamphlet upon them, "Tastapparat der Hand" (Leipzig, 1883), in which their physiological significance is fully discussed. Into that part of the subject I am not going to enter here. It has occurred independently to many persons to propose finger-marks as a means of identification. In the last century, Bewick, in one of the vignettes in the "History of Birds," gave a woodcut of his own thumb-mark, which is the first clear impression that I know of. Some of the latest specimens that I have seen are by Mr. Gilbert Thomson, an officer of the American Geological Survey, who, being in Arizona, and having to make his orders for payment on a camp suttler, hit upon the expedient of using his own thumb-mark to serve the same purpose as the elaborate scroll engraved on blank cheques—namely, to make the alteration of figures written on it impossible without detection. I possess copies of two of his cheques. A San Francisco photographer, Mr. Tabor, made enlarged photographs of the finger-marks of Chinese, and his proposal seems to have been seriously considered as a means of identifying Chinese immigrants. I may say that I can obtain no verification of a common statement that the method is in actual use in the prisons of China. The thumb-mark has been used there, as elsewhere, in attestation of deeds, much as a man might make an impression with a common seal, not his own, and say, "This is my act and deed"; but I cannot hear of any elaborate system of finger-marks having ever been employed in China for the identification of prisoners. It was, however, largely used in India, by Sir William Herschel, twenty-eight years ago, when he was an officer of the Bengal Civil Service. He found it to be most successful in preventing personation, and in putting an end to disputes about the authenticity of deeds.—*Mr. Galton in "Nature."*

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**"Caterpillar Rash."**—The pest of caterpillars, which has attracted considerable attention through the ravages they have committed on both forest and fruit trees in the midland and home counties, is caused by creatures which, though not new in kind, are in such profusion as to cause grave injury in the districts where they prevail. We learn from Berkshire and Buckinghamshire that the damage done by the myriads of these diminutive creatures exceeds anything within the recollection of men who have been owners of the same orchards for more than half a century. The oak, the hawthorn, the apple, and in a lesser degree the pear, are well-nigh defoliated, so that in some districts they have been reduced to almost a leafless condition. One orchard, the produce of which is worth large sums annually, has been rendered valueless for the present season. Persons walking or driving through the districts thus infested become bestrewed with caterpillar life; the creatures suspend themselves from the trees by means of delicate threads, either attached to one extremity or twined round the centre of the body. Having ravaged one tree thus suspended, they are wafted to another, and in this way follow the direction of the prevailing wind. As this has of late been from the east, it has given rise to the popular idea that they are brought by this pernicious wind. Some species excrete an irritating material which sets up a papular rash on the skin, very much resembling the rash of pyæmia, but differing from it in being local rather than general. The variety popularly known as the woolly bear irritates the skin not only by the secretion which exudes from it, but, it is believed, by its hairy covering also. The forms of caterpillar known to entomologists as geometers, or popularly as "fetch-afters," from their mode of progression, are the least irritating, and these make up the larger portion of the present pests, but they are intermingled with varieties irritating to the human skin. In the course of two or three weeks they may be expected to be followed by swarms of moths, unless, as the poet Spenser wrote three hundred years ago, some

"Fierce northern wind, with blustering blast,
Doth blow them quite away."—*Lancet.*

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**Hot Water for Plants.** — It is a fortunate circumstance that a plant will endure a scalding heat that is fatal to most of its minute enemies. Water heated to the boiling point, poured copiously over the stem of an enfeebled peach tree, and allowed to stand about its collar, will often have the happiest restorative effects. Trees showing every symptom of the yellows have often been rendered luxuriantly green and thrifty again by this simple means. The heat is presumably too much for the fungus which had infested the vital layers of the tree, immediately under the outer bark. The London florists recommend hot water, up to 145 degs. Fah., as a remedy when plants are sickly, owing to the soil souring—the acid absorbed by the roots acting as a poison. The usual resort is to the troublesome job of re-potting. When this is not necessary for any other reason, it is much simpler to pour hot water freely through the stirred soil. It will presently come through tinged with brown. After this thorough washing, if the plants are kept warm, new root points and new growth will soon follow. A lady friend had a fine calla in a three-gallon pot, which showed signs of ill health. On examination the outer portion of the filling was found mouldy, it being in large part fresh horse manure. As re-potting was inconvenient, the plant being in flower, hot water was freely used. It killed the mould, and the plant began to revive and was soon all right.

## IMPORTANT ANNOUNCEMENT.

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As many of our readers who live in remote districts prefer to obtain HEALTH from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we offer the following FREE GIFTS and BONUSES to all who subscribe to HEALTH for one year or longer:—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of HEALTH, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

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As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with HEALTH should be addressed directly to the PUBLISHER, 2, Paternoster-square, London, E.C., and *not to the Editor*.

HYDROPHOBIA IN PARIS.—In the first five months of 1888 there were no fewer than 280 applicants at M. Pasteur's laboratory from the department of the Seine alone, all of whom had been bitten by dogs either known to be rabid or suspected of being so. This number is almost equal to the corresponding total for the whole year 1887, which amounted to 306. The Prefect of Police has, therefore, issued an order that for six weeks no dog shall be allowed to go about the streets of Paris, unless led by a string. The owner of two dogs, which had been in contact with a rabid cur, was recently sent to prison for six days, and fined 200 francs (£8) for refusing to have them destroyed.

## Sanitary Appliances, Etc.

CELLULAR CLOTHING.

THE preliminary notice given to the clothing made by the Cellular Clothing Company, of 75, Aldermanbury, London, E.C., has been followed, we are interested in noting, by a unanimous verdict of approval on the part of the medical press, and by the journals devoted to cycling and allied sports and pastimes. In our opinion this excellent material has only to be known to be widely used and universally appreciated. As we pointed out in HEALTH No. 272, the qualities of this clothing-material, seen in its fine fibre, non-irritating to the skin, in its open-work, permitting a free circulation of air, and in its permeability, preventing damp and chill from the locking up of the skin-secretions, bid fair to cause it to supplant the flannels and wools hitherto relied upon for sanitary undergarments. Since our last notice, we have made a further and extended trial of the Cellular Clothing for ordinary wear and also for cycling purposes. Of its merits we can, therefore, speak positively, and we warmly recommend a trial of these garments by all who desire to ward off chill and, at the same time, to remain cool in the "dog days." A correspondent writes that in a recent boating excursion, he found the "Cellular Clothing a great boon; it contrasted most pleasantly with the dampness of the old flannels after a long stretch at the oars." The unique feature of this material is its combination of all sanitary requirements in the way of clothing, along with lightness and durability. It is not liable to shrinkage in washing. A complete list is now to hand of articles made in the "Cellular" material. Undergarments of all kinds and for both sexes, and for both winter and summer wear, sheeting and towelling, caps, sleeping-suits, and vests, form only a few of the articles made by the Company. We are glad to observe that a large number of agents in all the principal towns and cities has been appointed for the sale of the Clothing. One feature which will be warmly appreciated by the public is the *cheapness* of the articles in question; and on this point it may be remarked that value and durability have not been sacrificed to cheapness. Compared with the fancy prices demanded for woollen articles of foreign manufacture, the Cellular Clothing is sold at extremely moderate prices, while in elegance of style and appearance these articles are not to be surpassed.

TO PRESERVE FRUIT JUICES.—Formic acid is said to possess powerful preservative properties, exceeding, when added to acid solutions, even carbolic acid, and to be particularly suitable for adding to fruit juices; about a-quarter or half per cent. is the quantity requisite to preserve fruit juices, vinegar, glue, ink, &c.

HOW TO USE GLUE.—For glue to be properly effective it requires to penetrate the pores of the wood; and the more a body of glue penetrates the wood, the more substantial the joint will remain. Glues that take the longest to dry are to be preferred to those that dry quickly, the slow drying being always the strongest, other things being equal. For general use no method gives such good results as the following: Break the glue up small, put it into an iron kettle, cover the glue with water, and allow it to soak twelve hours. After soaking, boil until done. Then pour it into an air tight box, leave the cover off until cold, then cover up tight. As glue is required, cut out a portion and melt in the usual way. Expose no more of the made glue to the atmosphere for any length of time than is necessary, as the atmosphere is very destructive to made glue. Never heat made glue in a pot that is subject to the direct heat of the fire or of a lamp. All such methods of heating glue cannot be condemned in terms too severe. Do not use thick glue for joints or veneering. In all cases work it well into the wood, in a similar manner to what painters do with paint. Glue both surfaces of your work, except in cases of veneering. Never glue hot wood, as the hot wood will absorb all the water in the glue too suddenly and leave only a very small residue.

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GALVANISM *v.* NERVOUS DEPRESSION.

High-street, Borough, S.E., July 4th, 1888.

Gentlemen,—I am pleased to inform you that your Galvanic treatment has greatly benefited me, in giving me renewed energy, and I am now quite free from the nervous depression which I experienced so much before wearing your Belts. My sleep is sound and refreshing, my bowels are regular, my appetite good, and my appearance much improved in every way.—Yours respectfully, E. CAYNE.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* INDIGESTION.

Deans Hospital, Westoe, South Shields, June 26th, 1888.

Gentlemen,—I am pleased to say that I have received great benefit from your Galvanic Stomach Belt. I am now able to take my meals regularly and without those disagreeable symptoms I was hitherto subject to, and your treatment has toned up my general nervous system.—Yours truly,

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W. J. S. COOPER.

GALVANISM *v.* LOSS OF NERVE POWER.

Oxton, Birkenhead, June 25th, 1888.

Dear Sirs,—It is only due to you to state that your Galvanic Combined Band has been very effective in restoring nervous power to my daughter, for which she is very grateful.

I have much pleasure in frequently recommending your appliances, having witnessed their effectiveness in so many instances in my own family.—Yours faithfully, H. HOPE.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* NERVOUS DEPRESSION.

Balsall-heath, Birmingham, June 24, 1888.

Dear Sir,—You will remember my purchasing a Combined Band a short time since, and you will be pleased to hear that I have derived more good from your treatment than anything I have ever tried before, and I feel myself to be gradually getting stronger and more buoyant in spirits. I have found the Bands not at all uncomfortable to wear, and they do not inconvenience me in any way.—With many thanks, yours truly, J. H. PHELPS.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* GENERAL DEBILITY.

Crosby House, Carlisle, June 23rd, 1888.

Dear Sir,—I have much pleasure in saying that I have derived great benefit from your Galvanic Belt, and have written concerning another lady to whom I recommended your treatment.—Yours truly, E. COOKSON.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.

88, Summer-road, Edgbaston, Birmingham, June 22, 1888.

Dear Sir,—It is now ten years since I gave you a testimonial as to the efficacy of your electric appliances for the cure of nervous exhaustion. I am pleased to add that I am still enjoying most excellent health, and wish now to consult you on behalf of my wife.—Yours faithfully, A. WIGGIN.

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GALVANISM *v.* WRITER'S CRAMP and PAIN in the WRIST.

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I have not felt any inconvenience now for some time, and certainly consider the cure due to your Galvanic appliance.

I shall have much pleasure in testifying to its worth.—Yours faithfully,

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GALVANISM *v.* LOCAL WEAKNESS.

Cambuslang, Lanarkshire, N.B., 12th June, 1888.

Dear Sir,—I am happy to inform you that your special appliance for local weakness and nervous debility has quite cured me after a little patience and perseverance; and I am pleased to say that the result is entirely satisfactory.—Yours gratefully, J. NOAH.

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"Conference [maketh] a ready man."—*Bacon.*

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OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

## QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

F. W.—On the whole, you would find "Cassell's Family Physician" the best book for your purpose. It is plainly written, and contains all needful information.

KRONENQUELLE.—We advise you to try the Pitkeathly Water, advertised in our pages. Procure the variety to which Lithia has been added, as this is prepared specially for gouty subjects. Drink a small bottle of the water night and morning.

T. W. TOWNSEND.—Try cold sponging each morning, and take, for a time, a teaspoonful of the Syrup of the Hypophosphites in a wineglass of water, twice daily, after meals, as a suitable tonic. Take plenty of open-air exercise and nutritious food, and the probability is you will get perfectly well. Only a surgeon after an examination could decide the question of arrested growth of the part.

HERBERT S.—See advice given to "T. W. Townsend" above. Read, also, the pamphlet recommended to "M. A." in the present number for full information.

BENJ. MILLER.—Many thanks; we will use the paragraph.

MALHEUREUX.—Try twenty grains bromide of potash, taken, in water, at bedtime; sleep on a hard mattress in a well-ventilated room; and take plenty of outdoor exercise. Avoid constipation and attend to the other rules given in the pamphlet.

SUBSCRIBER.—[Please use a more distinctive name in future.] We have no confidence in the treatment you indicate. Let us hear your wants, and we will endeavour to aid you.

RHEUMATIC ARTHRITIS.—Our advice to you is to try the brine baths at Droitwich, and undergo a regular course of treatment there. A case like yours can never be cured without a course of systematic treatment, such as we have indicated. It is possible that at Malvern or Buxton the hydropathic treatment might be equally serviceable, but for cases like yours Droitwich is to be preferred in our opinion. Local treatment can be of no avail. Failing your ability to visit Droitwich, we should advise you to obtain a competent physician's opinion, say at Manchester as your nearest city.

W. C. R.—Varies according to individual capacity, state of health, and other conditions. After the first experiences, we should say about twice a week is the average.

Fred. W.—The tooth-abscess is not the direct cause of your symptoms, although it may aggravate them. We advise you to have the tooth extracted, and then to look well to your food. Avoid late suppers, cheese, salt foods, and other indigestible foods. Brush your teeth night and morning with Bayley's Tooth Powder (17, Cockspur-street, Pall-mall, S.W.), and use his Dentifrice Water as well. See that no constipation exists: if it does, follow out the food-hints given to "M. G. P." in last week's Health.

Bacillus.—Bournemouth or the Isle of Wight. These are the two most noted resorts for cases like yours, and we should say in either place you would be quite safe. Torquay is also an admirable winter residence for such cases.

F. Goodwin.—Rub into the roots of the hair each morning a little glycerine of borax; use a soft brush only; avoid hard and small combs; and wash the hair once a week with Bayley's Spermaceti Soap and tepid water.

Childhood.—The idea is erroneous. Alcohol in any form is not a necessity for a nursing mother, although good stout, or better still Bokö1, taken, say, to dinner, does no harm in the majority of cases, and possibly assists the digestion of the mother's food. It can only act beneficially on the child when the mother is sensible of such an addition to her diet improving her general health. We should certainly advise you, by way of experiment at least, to abstain from the stout, and to rely simply upon plain wholesome food, and plenty of it. If, on the contrary, you find a lack of digestive power and a tendency to eat too much while nursing, then resume the stout with your dinner. The good of alcohol is its "dietetic" effect in such a case, in making the food go further, as it were, in view of the strain on the mother's system.

Graziella.—There can be no explanation of the occurrence save that it is a habit. If you wish to avoid sleeping on your back, tie a reel of thread in the middle of your back, securing it round your waist. If you should turn on your back, the discomfort will awake you, and you may break off the habit in this way.

Constant Reader.—[Please use a more distinctive name in future].—Try a dose of Lamplough's Pyretic Saline in the morning, and at bedtime inhale the vapour arising from a pint of hot water to which a teaspoonful of Friar's Balsam has been added.

Artist.—Touch the warts carefully each day with aromatic vinegar; this should remove them. If not, write again.

George Nash.—Such a habit is difficult of cure. You should revise the diet of the patient in the first place, avoiding excess of vegetable foods. Try what one lead and opium pill will do, taken once daily, and then on alternate days, so as to stop giving the medicine by degrees. If this does not suffice write again, and state the food habits, and we will advise further. Stop the laudanum, of course, at once.

Helen.—Try the inhalation of Friar's Balsam at night, as recommended to "Constant Reader" in the present number. If this does not cure you, substitute Stern's "Pumiline" therefor. See full description of this latter article in Health No. 252. Internally take a dessertspoonful of Scott's Pure Cod Oil Emulsion after meals thrice daily, as a strengthening measure. A holiday spent by a not too bracing seaside place might also do you much good.

Leeds. — Certainly: your case is quite susceptible of cure. Read the pamphlet recommended to "M. A." in the present number of Health, and try the tonic therein named, consisting of coca and damiana, and every morning use cold sponging to the parts. If not successful in effecting improvement in your state, write again.

Lemon.—Lemon may be taken in the form you name, although you should avoid taking it in excess. For the rest, you require a tonic. Take twenty drops Fer Bravais in water twice daily after your meals, and drink Pitkeathly Water (advertised in our pages) regularly. You must also supervise your diet, and avoid excess of meat foods. The rules laid down, as to diet, &c., to "M. G. P." in last week's number, should be followed out by you. Write again, if not cured.

A Thin One.—[Why do you address the "Publisher" of Health? Attend to rules for correspondents. It is the Editor, and not the Publisher, who conducts a journal.] Procure from the Publisher of Health the series of articles published in Health entitled "How to Get Thin or Fat."

A. H.—[Note remark to previous correspondent regarding your direction of letter to Publisher instead of to Editor.] Such scars are very difficult to get rid of if the injury was a deep one. Apply a little Lanoline Cold Cream to the part, and trust to time.

G. Impey.—Read rule No. 7 for correspondents. To send a postcard is against our rules.

Hopeless (Greatham).—Wash the parts with Bayley's Spermaceti Soap regularly, night and morning, and apply a little Hazeline as a lotion after washing. If not cured, write again.

Lincolnshire Lass.—In the case you name, it is very evident there is considerable weakness of constitution, and all the ailments you name arise out of this weakness. We advise you to give a dessertspoonful of cod liver oil thrice daily, after food, and your druggist should add to the oil one ounce of gum mucilage and three drachms of syrup of iodide of iron to six ounces of the oil. This should be taken regularly, and it would be advisable, also, for the patient to be taken for a month or two to a bracing seaside resort—Cromer or Yarmouth would suit, we should say. Local applications are utterly useless so long as you do not treat the general system. Let us hear how the case progresses, as in event of there being no improvement visible in, say, six weeks' time, we should recommend you to visit a London physician and take his opinion.

Intermittent.—You probably owe your symptoms to the heat and worry of your business. Try to improve the ventilation of the kitchen, and to get more open-air exercise. When troubled with your symptoms, take five drops of Pure Terebene (Burroughs, Wellcome & Co.'s) on a piece of sugar. Possibly, your appetite is just a little too energetic, and a reduction of the quantity of food taken may assist you. Rest after meals is necessary. Write again if not cured.

Exhibition.—[Kindly note what is said to the correspondents "A Thin One" and "A. H." above regarding wrong direction of letters.] The age of 28, as far as mere age is concerned, is preferable to that of 30; but a couple of years can make little difference in any way.

James Watt.—Try the lotion recommended to "H. H. B." in Health No. 274. Keep the hair short, and wash it once a week with Bayley's Soap and tepid water.

Boston.—The treatment already recommended you should be tried first of all. Do not tamper with drugs or medicines indiscriminately. Read the pamphlet recommended to "M. A." in the present number.

C. Fairley.—The Cellular Clothing Company's garments (advertised in our pages) should be worn by you. For cycling they are perfection. See notice in a recent number of Health, and in present number also.

C. C. A.—Note the food-hints given you in the book named; and in addition use Dahl's Cakes, which are a capital remedy, inasmuch as they are not a drug, but a food.

Ellen R.—Stop the oatmeal, and in its place use Scott's Midlothian Oat Flour. This excellent preparation will prevent the irritation of which you speak.

C. Parker.—1. Try the Cellular Clothing (advertised in our pages): it will enable you to avoid chills and to take free exercise without risk of cold. 2. At the age of twenty-one usually.

Jumbo.—Take half a Dahl's Cake in your tea or coffee each morning as a cure for constipation; and at night try a Cascara Tabloid in addition. Avoid cheese and salt foods.

D. Chalmers.—Such cases are not uncommon, and no operation as a rule is needed. Send stamped addressed envelope, and we will write you privately.

S. J.—1. Yes: with a battery attached thereto it will prove effective enough. 2. Drink Pitkeathly Water (advertised in our pages), using the variety of that water to which Lithia has been added. In addition, as a suitable tonic, take fifteen drops of Fer Bravais after meals, in water, thrice daily; and avoid excess of flesh-foods.


## A MEDICAL OPINION.

"I know of no remedy in the world equal to Warner's Safe Cure for the treatment of diseases of the kidneys and liver," said Dr. A. J. Benedict in a lecture recently delivered before the Balloon Society of Great Britain at Westminster. "I have had ten years' experience as a specialist in treating diseases of the kidneys, liver, and urinary organs, and during that time have prescribed for no less than twenty thousand persons who have been suffering from such complaints. The majority of diseases of the kidneys and liver arise from obstruction of these organs, and, in my judgment, which I may say has been verified by my experience, there is no remedy equal to Warner's Safe Cure. It has been tested for years by liberal-minded medical men and has been the means of saving thousands of sufferers. I have seen patients in every stage of kidney disease, from the merest trace of albumen in the water to absolute solidity on boiling; and I have been consulted many and many a time by poor sufferers, who have been abandoned by the regular profession to die, and after prescribing Warner's Safe Cure, the best results have always ensued, even under the most adverse circumstances. The more advanced medical men of Germany and the United States are making use of this great remedy, and with the most astonishing results." Dr. Benedict will be pleased to give advice, free of charge, to all sufferers who may write him. His address is 36, Shepherd's-bush-green, London, W.

F. G. B.—Take Dahl's Cakes regularly to breakfast and tea, and in addition take one or two of Burroughs, Wellcome & Co.'s Cascara Tabloids at bedtime when your liver-symptoms trouble you. 2. Commonly due to indigestion and want of exercise. Revise your food-habits, and avoid cheese, pastry, and like indigestibles. Take Grant's Oat Flour in place of tea and coffee, as a diet likely to relieve you. Write again if not bettered.

A. FRENCH.—The book on "Convalescent Cookery," by Miss Ryan (Chatto & Windus), price 1s., is a volume likely to suit you.

SECERNO.—Wash the skin regularly with Bayley's Spermaceti Soap and tepid water. If the skin itches, apply a little of the following lotion: Glycerine, an ounce and a half; bicarbonate of soda, one drachm. Mix. Label: "The lotion — to be used as directed."

TABLOID.—Burroughs, Wellcome & Co., Snow-hill Buildings, London, E.C., are the makers. All druggists know Fairchild's Peptonizing Powders.

BALLOON. — Howie's Filter (Hurlford, Kilmarnock, N.B,) is one of the best and safest you can use. It is simple in construction and not liable to derangement.

DAVID KANE. — Try the Vin Mariani (Roberts & Co., Chemists, New Bond-street, London, W.) as a suitable tonic.

ALTER EGO.—You may find the following mixture cure you: Carbonate of ammonia, one drachm; bicarbonate of potass, a drachm and a half; infusion of chiretta, six ounces. Mix. A tablespoonful thrice daily before food.

FILS. — Address your enquiry to the French Hygienic Society, 56, Conduit-street, London, W., and you will obtain information on the subject.

BEXLEY.—If the tonic you are taking now does not suit, try the Vin Mariani (Roberts & Co., Chemists, New Bond-street, London, W.) after meals twice daily.

C. C.—Go to a chiropodist, and have the corn extracted. There are several persons who practise as such in your city.

FACTOR.—If desired, we can send you address of a specialist in London on receipt of stamped addressed envelope.

B. G.—Wash the hair once weekly with Bayley's Soap and tepid water. Keep the hair short, and use a soft brush only. Apply a little pure almond oil, scented, to the hair each morning.

MARTIN A.—Probably due to defective skin action. Take hot baths at bedtime occasionally, and internally take twenty drops Fer Bravais, twice daily, in water, after your food.

G. F. O.—Take a teaspoonful of Syrup of the Hypophosphites, twice daily, in a wineglass of water, after your meals. Read and study the pamphlet, "A Lecture to Young Men" (published by Mr. Renshaw, 356, Strand, London, W.C.), price 1s. 1d. post free.

A. B. M.—You should try the plan of inhaling through the nostrils at night the vapour of hot water to which a little of Stern's Pumiline has been added. For description of this preparation see article in HEALTH, No. 252.

NIXA.—A lotion which you should find useful is made by mixing together half a drachm of Goulard's Extract, two drachms spirits of wine, and eight ounces of water. Apply this to the boil constantly on a piece of lint.

ETHEL G.—Use the following lotion, to be applied with a piece of lint, and allowed to dry on the parts: Powdered calamine (Ver), two drachms: powdered zinc oxide, one drachm; glycerine, one drachm; camphor water, to make up six ounces. Label: "For external use only."

M. A.—Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, Medical Publisher, 356, Strand, London, W.C.), and follow out the instructions it will afford you.

EGRET. — Wash the affected parts with warm water, and dry them with a soft cloth; next smear the parts with the following ointment:—Oxide of zinc, one drachm; subnitrate of bismuth, one ounce; vaseline, a sufficient quantity to make an ointment.

BIRKIE. — Read the article on how to treat "Blackheads" in HEALTH No. 199, which may be had from the Publisher, price 2½d., post free.

MAIN POINT. — Try Bayley's Cure for Piles, 17, Cockspur-street, Pall-mall, London, S.W.

A. FORD.—If you apply to Mr. Harness (52, Oxford-street, W.) you will be furnished with full particulars regarding the truss you need.

ADVICE TO PEOPLE ABOUT TO KEEP FOWLS.—Save your money, and buy some of Borwick's Gold Medal Baking Powder.

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